

ATOMIC ENERGY *newsletter*®

A SERVICE FOR INDUSTRY BUSINESS ENGINEERING AND RESEARCH
ROBERT M. SHERMAN, EDITOR. PUBLISHED BI-WEEKLY BY ATOMIC ENERGY NEWS CO., 1000 SIXTH AVENUE, NEW YORK 18, N. Y.

May 1st, 1956
Vol. 15...No. 6

Dear Sir:

Plans for the establishment of an international agency to promote the peaceful uses of atomic energy have been completed by 12 sponsoring nations at the United Nations, and are now ready to be presented to 84 members of the UN and its affiliated agencies. This September, a conference of representatives of these nations will consider this tentative agreement. Calling for international cooperation and international pooling of resources in the development of atomic power, the plans were compiled from previous drafts at conferences that opened in Washington Feb. 27th. The agency, which approval of the plans would establish, would have authority to send inspectors into the territory of states receiving materials from its central "nuclear bank", and in case of violations (materials used for other than commercial purposes) the offender would be suspended from membership. (Other INTERNATIONAL news, p. 2 this LETTER.)

Two courses in nuclear engineering are to be given by the University of California (engineering extension) at Berkeley this summer. One is a nuclear engineering short course, from July 2-August 31st, to give engineers and scientists intensive training in the basics of nuclear energy and its applications to industry. The other, a nuclear engineering survey, is a one week lecture, demonstration and discussion course in reactor technology for executives in business and industry who do not have technical training. (Other COURSES, MEETINGS, CONFERENCES, p. 4 this LETTER.)

Valve position indicators and detectors for nuclear reactors will be supplied by Fairchild Camera & Instrument Corp's nuclear instrumentation activity under a production sub-contract recently awarded the Syosset, L.I., firm. Items will go to the Bettis plant, in Pittsburgh, Pa., operated under a prime USAEC contract by Westinghouse Electric Corp. Dr. H. E. DeBolt, head of Fairchild's nuclear instrumentation department, said the new products would provide accurate control indications for the operator of a nuclear power reactor. Fairchild is also making available, to producers of nuclear reactors, control rod drives, reactor power level monitoring devices; radiation monitoring equipment; and associated mechanisms. (Other PRODUCTS, PROCESSES, INSTRUMENTS, p. 4 this LETTER.)

The frequency and severity of accidents in nuclear energy facilities in the United States is now one-fifth or one-sixth the rates of 1943, a recent tabulation of statistics from such plants now shows. The reduced accident rates now make at least 99.7% of the 150,000 people employed in such plants standard risks for life insurance, requiring no extra premium due to any atomic hazard, according to insurance underwriters writing such policies. The small percentage for whom an extra rate is required includes areas of certain nuclear activity and special research. (Other BUSINESS news, p. 2 this LETTER.)

The British firm of W. H. A. Robertson & Co., a subsidiary of Tube Investments, Inc., has recently obtained an order from the Swedish atomic energy authority (A.B. Atom Energi) to supply specialized rolling mills for uranium.

ATOMIC ENERGY BUSINESS NEWS...

NEW GERMAN PLANT TO BE BUILT BY INSTRUMENT MANUFACTURER:- A new plant in Munich, Germany, which will cost \$300,000 and accommodate 400 employees, is to be built by Beckman Instruments, Inc., headquartered in California. Beckman, manufacturer of measurement and control devices, is a pioneer producer of radiation detection and other instruments for use in the atomic energy field work. Beckman feels that the new German plant will facilitate delivery and service of its products in western Europe.

STANDARDS BEING ESTABLISHED FOR COMMERCIAL ATOMIC WORK:- Now under study by the American Standards Association, New York, are national standards for commercial and industrial uses of fissionable material. The planning committee for standards in the field of nuclear energy, set up by the Association (comprised of 36 persons from 17 industries) is working in six major areas: general or administrative standards such as those for terminology, symbols, and color codes; radiation protection of people and property; standards for nuclear safety such as laboratory experimentation, site location, and transportation or storage; and standards for equipment; for processes; and for materials.

NEW SITE FOR NUCLEAR LABORATORY MAY BE OBTAINED BY FIRM:- Although the General Atomic division of General Dynamics Corp. has set up temporary laboratory and administrative facilities in San Diego, Calif., obtaining a permanent site depends on the special municipal election that will be held by San Diego June 5th. Voters will indicate at the election (Proposition H) whether the municipality is to transfer approximately 300 acres of city-owned land to General Atomic for its basic and applied nuclear research laboratory. (At last week's stockholders' meeting of General Dynamics in Dover, Del., John J. Hopkins, board chairman, said consolidated net sales for the firm for the first quarter ending Mar. 31, 1956 were approximately \$173,473,000 compared with \$159,241,000 for the same period in 1955. The company's order backlog on Mar. 31, 1956 was \$1,653,000,000, a new high for the firm, Mr. Hopkins said, while contracts under negotiation at that time were \$370,000,000, he added.)

INITIAL APPROVAL GIVEN NUCLEAR POWER PLANT PROPOSALS:- The nuclear power plant proposals of two electric cooperatives, made under the USAEC's program of aid to such plants within the 5,000 to 40,000 KW range, have been approved by the USAEC. Next step is negotiation to determine the kind of assistance to be given by the USAEC to the cooperatives, and the cost limits of this assistance. Both of these cooperatives (Rural Cooperative Power Assoc. of Elk River, Minn., and Wolverine Electric Cooperative of Big Rapids, Mich.) proposed that the USAEC finance and retain title to the nuclear reactor portion of the power plants. The Rural Coop. Power Assoc. plan calls for a closed cycle boiling water nuclear reactor power plant with an electrical capacity of 22,000 KW. It would assume capital costs of \$2,450,000, with the USAEC asked to contribute \$6,860,000 and also asked to waive the use charge for the fissionable material used. Wolverine proposed an aqueous homogeneous reactor plant of 5,000 to 10,000 KW of electrical generating capacity, and would assume capital costs of \$1,088,000 with the USAEC asked to contribute \$3,788,000.

INTERNATIONAL ATOMIC ENERGY NEWS...

BRAZIL:- This country is to be one of the first to receive a contribution (\$350,000) by the U.S. towards the cost of a nuclear research reactor, under the offer of June, 1955, made by President Eisenhower. The Brazilian Atomic Energy Commission intends to contract with a firm in the U.S. to construct a 5,000 KW pool type reactor, while the USAEC will loan Brazil the uranium-235 required as fuel in the reactor. (Meanwhile, a special investigating commission of the Brazilian chamber of deputies has been conducting closed hearings on a bill that would ban all exports of monazite sands, from which thorium is extracted, and all other radioactive and related materials. Support for the bill, mainly from extremist political parties, is based on claims that the U.S. is getting thorium raw materials at too low a price. Most of the monazite exported goes to Lindsey Chemical Co., Chicago, largest U.S. processor of monazite, and pioneer supplier to the USAEC of thorium. Foreign exchange problem is resolved by a 1952 pact, revised in 1954, under which Brazil received 100,000 tons of U.S. wheat in exchange for monazite sands. India, only other nation with substantial deposits of monazite sands, banned their export several years ago.)

ATOMIC ENERGY FINANCIAL NEWS...

ASSET INCREASE REGISTERED BY MUTUAL FUND IN NUCLEAR FIELD:- An asset increase of 73%, or \$526,000, has been recorded by Science & Nuclear Fund for the six months ending Mar. 31st, 1956. Total assets of the Fund are \$1,239,461 as compared with \$713,000 on Sept 30, 1955, while asset value per share was \$11.75, over the \$10.10 registered six months previously. During the half year the Fund added common stocks of Climax Molybdenum, Great Northern Paper, High Voltage Engineering, Kawecki Chemical, Minneapolis Honeywell, and Shell Oil to its portfolio. Securities sold were American Machine & Foundry, Corning Glass, Sylvania Electric, Tracerlab, Westinghouse, and Zenith Radio. Since May, 1955, when the Fund began operations, net unrealized appreciation on securities it holds amounts to \$167,156. It is 53% invested in firms deriving revenue from, or with management effort or research in, nuclear energy work, with the balance in companies deriving revenue from recent scientific and technological developments.

DE-LISTING SOUGHT BY MUTUAL FUND:- Axe Science and Electronics Corp. expects to withdraw its shares from trading on the American Stock Exchange, and make a continuous offering of shares; this is in line with its plans to change over to an open-end mutual fund. Axe Science, which has substantial portfolio holdings of firms in the nuclear field, feels that a continuous offering of its shares will increase the net assets available for investment, and otherwise benefit shareholders and the corporation.

EARNINGS UP FOR URANIUM MINING FIRM:- Four Corners Uranium Corp. of Denver earned a net of \$328,431, or 15¢ a share in 1955, according to President E. H. Sanders. Net for 1954 was \$154,914, or 7¢ a share. The company has no long term debt, Mr. Sanders said; he noted that there are 2,140,580 common shares outstanding. In addition to its uranium activities, Four Corners holds interests in oil producing concerns and has 39,493 acres of oil leases near Blandings, Utah.

ADDITIONAL ACQUISITION MADE BY NUCLEAR FIRM:- Isotope Specialties Co., Burbank, Calif., has been acquired by Nuclear Corp. of America, Inc., New York, in exchange for 47,991 shares of Nuclear's class A stock. (The class A closed at 2 1/8 on the American Stock Exchange yesterday.) This is the fourth firm acquired by Nuclear Corp. since its formation in October, 1955. Other acquisitions were Radioactive Products, Inc., Detroit; Central Sales & Manufacturing Co., Danville, N.J.; and Research Chemicals, Inc., Burbank, Calif. Isotope Specialties has complete facilities for the synthesis of about 150 organic and inorganic radiochemicals.

STOCKHOLDING CHANGES SHOWN:- Recent changes in stockholdings by officers of firms active in the nuclear field, as reported to the Securities & Exchange Commission, include 10,000 common shares of Climax Molybdenum bought by Arthur H. Bunker, president, increasing his direct holdings to 20,501; 2,000 common shares of Norden Ketay Corp., sold by Paul W. Adams, chairman, decreasing his direct holdings to 13 shares and indirect holdings through a holding company to 71,584; and the taking up through stock option of 30,000 shares of General Dynamics Corp. by John J. Hopkins, chairman, making his direct holdings 88,294, and the taking up of 4,000 common shares by L.J. Gross, vice-president, making his holdings 8,114.

RAW MATERIALS...prospecting, mining, marketing...

UNITED STATES:- The Strong Mine North, in Victor, Colo., has been sold to Front Range Mines, Inc., a uranium operation. J. Deersken, of Denver, president of Front Range, said his firm had paid \$540,000 in cash and stock on the basis of gold ore shown. Front Range mines has extensive uranium holdings in northwest Colorado and a mill in Idaho Springs.... Operations of Consolidated Uranium Mines will not be affected by the grand jury indictment last week of Walter Tellier, head of Tellier & Co., Jersey City, N.J., whose brokerage firm had been active in the sale of Consolidated stock. Mr. Tellier is alleged to have made exaggerated and improper statements concerning Consolidated during the course of his sales activity. Gross sales of uranium ore have consistently increased during the past few years, E. G. Frawley, president of Consolidated said in his last stockholders' report.

CANADA:- Revenue of \$1,990,183 and a profit of \$500,000 for 1955 was shown by Gunnar Mines in 1955, president G. A. LaBine said in his annual report. Plant expansion, however, resulted in a working capital deficit of \$3.5 million at year's end, he noted, but current profits are such that this is expected to be "quickly corrected", Mr. LaBine stated.

NEW PRODUCTS, PROCESSES & INSTRUMENTS...for nuclear lab & plant...

PRODUCTS FROM THE MANUFACTURERS:- Cobalt-60 gamma-ray sources, providing an economical source of high energy pure gamma radiation, are offered encapsulated in a $\frac{1}{2}$ " diameter by $\frac{1}{2}$ " long case, sealed against leakage, and individually calibrated to within plus-or-minus 10% of stated value. The sources are available in 14 different values from 1-millicurie to 2,000-millicuries. --Nuclear Instrument & Chemical Corp., Chicago 10, Ill.

X-Ray radiography unit, designed specifically for rapid inspection of welds, pipe lines, etc., is compact enough to fit into trunk of automobile. --North American Philips, New York 17, N.Y.

PRODUCTS & IONIZING RADIATION:- An ultra-fast method of vulcanizing silicone rubber by irradiation with a standard electrostatic generator has been devised by H.R. Sheppard, E. J. Croop, and G. C. Gainer, of the materials engineering department of Westinghouse Electric Corp. Dr. Gainer said the group used a 2 MEV machine to convert silicone gum into silicone rubber and produced a better rubber in two seconds than conventional vulcanizing methods yield in several hours. He said the method duplicates all the good features of chemical vulcanization without introducing chemical agents which remain in the rubber and spoil some of its desirable properties, especially those required for electrical insulation.

Discussing lubricant performance in machinery subjected to ionizing radiation, R. O. Bolt and J. G. Carroll, of California Research, told a recent meeting of the Society of Lubrication Engineers that, of three synthetic lubricants whose behavior they studied, a compounded poly (propene oxide) actually improved upon irradiation. The California Research work was sponsored by Fairchild Engine & Airplane Corp. under an Air Force contract Fairchild holds.

NOTES:- New England Nuclear Corp. is a new firm specializing in radioactive materials, and offering consulting services in industrial applications of radioactivity. Formed by Seymour Rothchild and Edward Shapiro, formerly heads of the organic and inorganic chemistry departments of Tracerlab, Inc., the new firm will manufacture labeled compounds, reference sources, and radioactivity devices. New England Nuclear is at 575 Albany St., Boston 18, Mass.

MANUFACTURERS' LITERATURE:- Catalog on X-ray and radioisotope protective materials is offered by Ameray Corp., Route 46, Kenil, N. J.

Technical bulletins on its model CS-600 scintillation counter, and its model CS-40 survey meter, are available from NRD Instrument Co., 6425 Etzel Ave., St. Louis 14, Mo.

NEW BOOKS & OTHER PUBLICATIONS...on nuclear energy subjects...

Genetics, the Modern Science of Heredity, by E. O. Dodson, asso. prof. of biology, Univ. of Notre Dame. A college text. Dr. Dodson warns that genetic damage, unlike radiation sickness, does not have the benefit of a minimum threshold of dosage. He urges that precautions be taken to protect individuals from the genetic effects of radiation just as precautions are currently taken against radiation sickness. --W. B. Saunders Co., Philadelphia.

Bibliography on Ionizing Radiations, Supplements I & II, No. PB-111636S. 537 pages, \$11.00. Subject Index on Ionizing Radiations, Supplements I & II. No. PB-111637S. 161 pages. \$4.25. These are current supplements to the bibliographic series on radiation sterilization of foods prepared by the Armed Forces' Quartermaster food & container institute. --Office of Technical Services, Wash. 25, D. C.

Separation & Mounting of Some Fission Elements by Electro Deposition, by D. Lee and G. B. Cook, Atomic Energy Research Establishment, Gt. Britain. 22 pages. (59¢). Theory & Practice of Shielding, by C. C. Horton, Atomic Energy Research Establishment, Gt. Britain. 19 pages. (45¢). --British Information Services, Rockefeller Plaza, N.Y.

MEETINGS, COURSES, CONFERENCES...

COURSES:- A two week intensive course on Nuclear Reactors & Radiations in Industry is to be given Aug. 20 to 31, 1956, by the College of Engineering, University of Michigan, Ann Arbor, Mich. Further information from Prof. Wm. Kerr, at the University..... A new sequence of courses in nuclear engineering will be offered by the College of Engineering, Univ. of Notre Dame, beginning this September, 1956. The courses are intended primarily for mechanical engineering students. Details may be obtained from Marcel Newman, department of mechanical engineering, at Notre Dame.

ATOMIC ENERGY PATENT DIGEST...

NEW PATENT GRANTS TO PRIVATE INDIVIDUALS AND/OR FIRMS:- Method of most advantageously delivering the ionizing energy of a single beam of charged particles to substances or matter. U. S. Pat. No. 2,741,704 issued Apr. 10, 1956; assigned to High Voltage Eng. Corp., Cambridge, Mass. (Inventors: J. G. Trump, R. J. Van de Graaff.)

Bore hole logging apparatus utilizing radioactive means. U. S. Pat. No. 2,741,705 issued Apr. 10, 1956; assigned to The Texas Co., New York, N.Y. (Inventor: A. S. McKay.)

Radiation measuring instrument (electrostatic) U. S. Pats. Nos. 2,741,706 & 7, issued Apr. 10, 1956; both assigned to Nassau Distributing Co., New York, N.Y. (Inventor: R. Futterknecht, Stuttgart, Germany.)

Apparatus using a proportional counter type radiation detector. U. S. Pat. No. 2,741,708 issued Apr. 10, 1956; assigned to Texaco Development Corp., New York, N.Y. (Inventor: F. G. Armistead.)

Detector for indicating the spectral distribution of penetrating radiation. U. S. Pat. No. 2,741,709 issued Apr. 10, 1956; assigned to Texaco Development Corp., New York, N.Y. (Inventor: A. L. Tirico, R. J. Ruble.)

Quartz fiber electroscope, with charging means. U. S. Pat. No. 2,742,577 issued Apr. 17, 1956, to R. P. Henderson, Abington, England.

Multi section Geiger-Muller counter. U. S. Pat. No. 2,742,586 issued Apr. 17, 1956, to Herbert Friedman, Arlington, Va.

PATENTED INVENTIONS AVAILABLE FOR LICENSING:- The following group of 50 patented inventions, developed in the course of USAEC-sponsored nuclear research, and property of the U. S. Government, is now available for royalty-free (non-exclusive) licensing; inquiries should be made to Patent Branch, USAEC, Wash. 25, D.C. (1) Filtering apparatus; No. 2,732,072. (2) Diaphragm pump; No. 2,732,127. (3) Ultra high speed shutter; No. 2,732,777. (4) Pump for highly radioactive liquids; No. 2,732,807. (5) Preparing an active form of uranium dioxide; No. 2,733,123. (6) Manufacturing uranium tetrachloride; No. 2,733,124. (7) Recovery of uranium from waste metal products; No. 2,733,125. (8) Uranium liberation; No. 2,733,126. (9) Precipitation of fluoride-free uranium tetroxide; No. 2,733,127. (10) Process for recovery of uranium in presence of iron; No. 2,733,128. (11) Purification of nickel powder; No. 2,733,142. (12) Electrolytic reduction cells; No. 2,733,202. (13) Regulator for calutron ion source; No. 2,733,342. (14) Positive ion source; No. 2,733,343. (15) Ion generator regulator; No. 2,733,344. (16) Regulator for calutron ion source; No. 2,733,345. (17) Ion producing mechanism; No. 2,733,346. (18) Reactor for calutron ion source; No. 2,733,347. (19) Ion source units; No. 2,733,348. (20) Improvements in calutron; No. 2,733,349. (21) Calutron control circuit; No. 2,733,350. (22) Protective coating for workers handling highly corrosive substances; No. 2,734,042. (23) Magnetic control device for pumps; No. 2,734,678. (24) Preparing chlorides of uranium; No. 2,734,705. (25) Magnetic field regulator; No. 2,735,044. (26) Preparing uranium trioxide; No. 2,735,745. (27) Producing uranium tetrachloride; No. 2,735,746. (28) Ternary uranium alloy; No. 2,735,761. (29) Reactor control; No. 2,735,811. (30) Uranium alkoxy compounds; No. 2,735,857. (31) Automatic vapor control; No. 2,735,943. (32) Electronic switching apparatus; No. 2,735,963. (33) Process for extracting uranium from its ore; No. 2,736,634. (34) Zirconium ternary alloys; No. 2,736,651. (35) Reactor; No. 2,736,696. (36) Lubricant for cold working of thorium wire; No. 2,736,700. (37) Wide band pulse height discriminator; No. 2,736,801. (38) Pulse height analyzer system; No. 2,736,802. (39) Blocking oscillator; No. 2,736,806. (40) Ion producing mechanism; No. 2,736,808. (41) Ion generator and projector; No. 2,736,809. (42) Charge receptacles for use in ion source units; No. 2,736,810. (43) Calutron receiver; No. 2,736,811. (44) Radioactivity measuring apparatus; No. 2,736,812. (45) Pocket radiation meter; No. 2,736,817. (46) Measuring device and apparatus; No. 2,736,818. (47) Recovery of uranium from gold ore leach residues; No. 2,737,438. (48) Producing uranium hexachloride; No. 2,737,439. (49) (50) Ion source for calutron; No. 2,737,589, 590.

Sincerely,

The Staff,
ATOMIC ENERGY NEWSLETTER

May 1, 1956

